AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A transmitter comprising:

average power level calculation circuitry for determining the time-average power of a digital amplitude signal; ~~and~~

conversion circuitry for scaling said digital amplitude signal according to a first scale factor, converting the scaled digital amplitude signal for transmission to an analog amplitude signal, and scaling the analog amplitude signal according to a second scale factor; and

control circuitry for complementarily varying said first and second scale factors according to said time-average power.

2. (original): A transmitter as claimed in claim 1, wherein said digital amplitude signal is a multiplexed digital amplitude signal in which a plurality of digital spread spectrum signals are multiplexed.

3. (original): A transmitter as claimed in claim 1 or 2, wherein said conversion circuitry is configured to:

compare the time-average power of said multiplexed digital amplitude signal with a reference power level and determine a differential power value; and

determine said first and second scale factors according to said differential power value.

4. (original): A transmitter as claimed in claim 1, wherein said conversion circuitry comprises:

an interpolator for interpolating said digital amplitude signal and producing an output signal containing a greater number of bits than a number of bits contained in said digital amplitude signal;

a bit shifter for selecting a predetermined number of bits from a plurality of bit positions of said output signal of the interpolator, said plurality of bit positions being determined by said first scale factor;

a digital-to-analog converter for converting the output signal of the interpolator to an analog signal; and

a gain-controlled amplifier for amplifying the analog signal from the digital-to-analog converter at a level determined by said second scale factor.

5. (original): A transmitter as claimed in claim 1, further comprising: an up-converter for modulating said analog amplitude signal onto a carrier;

a power amplifier for amplifying the modulated carrier; and detection circuitry for detecting power variation of said power amplifier,

wherein said control circuitry is responsive to the detected power variation for controlling said second scale factor.

6. (original): A transmitter as claimed in claim 1, wherein said average power level calculation circuitry is a channel management unit.

7. (original): A spread spectrum transmitter comprising:

a multiplexer for multiplexing a plurality of spread spectrum

channel signals to produce a digital amplitude signal;

average power level calculation circuitry for determining the time-average power of the digital amplitude signal; and

conversion circuitry for scaling said digital amplitude signal according to a first scale factor, converting the scaled digital amplitude signal to an analog amplitude signal, scaling the analog amplitude signal according to a second scale factor; and

control circuitry for complementarily varying said first and second scale factors according to said time-average power.

8. (original): A spread spectrum transmitter as claimed in claim 7, wherein said conversion circuitry is configured to:

compare the time-average power of said multiplexed digital amplitude signal with a reference power level and determine a differential power value; and

determine said first and second scale factors according to said differential power value.

9. (original): A spread spectrum transmitter as claimed in claim 7, wherein said conversion circuitry comprises:

an interpolator for interpolating said digital amplitude signal and producing an output signal containing a greater number of bits than a number of bits contained in said digital amplitude signal;

a bit shifter for selecting a predetermined number of bits from a plurality of bit positions of said output signal of the interpolator, said plurality of bit positions being determined by said first scale factor;

a digital-to-analog converter for converting the output signal of the interpolator to an analog signal; and

a gain-controlled amplifier for amplifying the analog signal from the digital-to-analog converter at a level determined by said second scale factor.

10. (original): A spread spectrum transmitter as claimed in claim 7, further comprising:

an up-converter for modulating said analog amplitude signal onto a carrier;

a power amplifier for amplifying the modulated carrier; and detection circuitry for detecting power variation of said power amplifier,

wherein said control circuitry is responsive to the detected power variation for controlling said second scale factor.

11. (original): A transmitter as claimed in claim 7, wherein said average power level calculation circuitry is a channel management unit.

12. (original): A communication method comprising the steps of:

a) determining the time-average power of a digital amplitude signal;

b) scaling said digital amplitude signal according to said timeaverage power;

c) converting the scaled digital amplitude signal to an analog amplitude signal;

d) scaling the analog amplitude signal according to said timeaverage power complementarily to the step (b); and e) transmitting the scaled analog amplitude signal.

13. (currently amended): A communication method as claimed in claim 12, wherein the step (b) comprises the steps of:

interpolating said digital amplitude signal and producing an output signal containing a greater number of bits than a number of bits contained in said digital amplitude signal;

selecting a predetermined number of bits from a plurality of bit positions of said output signal according to said time-average power ~~power~~;

converting the scaled digital amplitude signal to an analog amplitude signal; and

amplifying the analog amplitude signal according to said timeaverage power.

14. (original): A communication method as claimed in claim 12, further comprising:

modulating said analog amplitude signal onto a carrier; amplifying the modulated carrier;

detecting power variation of the modulated carrier; controlling amplification gain of said analog amplitude signals according to the detected power variation.

15. (original): A communication method comprising the steps of:

a) determining the time-average power of a digital amplitude signal;

b) comparing the determined time-average power with a reference power level and determining a differential power value;

c) scaling said digital amplitude signal according to said differential power value;

d) converting the scaled digital amplitude signal to an analog amplitude signal;

e) scaling the analog amplitude signal according to said differential power value complementarily to the step (c); and

f) transmitting the scaled analog amplitude signal.

16. (original): A communication method as claimed in claim 15, wherein the step (c) comprises the steps of:

interpolating said digital amplitude signal and producing an output signal containing a greater number of bits than a number of bits contained in said digital amplitude signal;

selecting a predetermined number of bits from a plurality of bit positions of said output signal according to said differential power value;

converting the scaled digital amplitude signal to an analog amplitude signal; and

amplifying the analog amplitude signal according to said differential power value.

17. (original): A communication method as claimed in claim 15, further comprising:

modulating said analog amplitude signal onto a carrier; amplifying the modulated carrier;

detecting power variation of the modulated carrier; and controlling amplification gain of said analog amplitude signals according to the detected power variation.